

UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE  
FOREST INSECT INVESTIGATIONS

MEMORANDUM FOR THE FILES - COEUR D'ALENE  
LABORATORY

Re: Dying Willow in Vicinity of Coeur d'Alene,  
Idaho

By  
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Coeur d'Alene, Idaho  
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MEMORANDUM FOR THE FILES - COEUR D'ALENE LABORATORY

Re: Dying Willow in Vicinity of Coeur d'Alene, Idaho

The fact that native and ornamental willows were being killed by insects was first reported by this laboratory in 1931 when the weevil Cryptorhynchus lapathi was reared from material collected at Priest River, Idaho. Since that time Mr. Rust has reared this insect from dying willows along the shore of Lake Coeur d'Alene. During the past season more intensive examinations were made of three areas in the vicinity of Coeur d'Alene, Idaho. During June the writer made several examinations of dying willows along the Trail Creek drainage of the Coeur d'Alene National Forest. On October 14th Mr. Rust and the writer examined large areas of willow near Athol, Idaho and brought a supply to the laboratory for examination and rearing. On November 10th Mr. Rust and the writer made a second examination of this area which included willow shoots of all sizes at various elevations from the top of Bunko Ridge to the bottom and along the edge of Rathdrum Prairie. This examination also included the willow along the shore of Lake Coeur d'Alene near Rippling Waters.

The observations made to date indicate that the death of willow shoots results unquestionably from injury by insects. The possibility of winter-kill was eliminated immediately because of the presence of withered 1936 foliage on many of the dead branches, showing that the injury occurred following the resumption of growth in the spring, and also because of the uneven height of the dead portions of the shoot.

Likewise, the possibility of unfavorable site was eliminated because not all of the shoots were affected in this manner, and also because of the vigorous sprouting which was observed from the bases of the dead shoots.

The larvae and work of two insects known to be primary killers were found in the willows during these examinations, one a Buprestid of the genus Agrilus, and the other the weevil Cryptorhynchus lanathi. In the Trail Creek examinations only Agrilus sp. could be found in the dead and dying willow; in the examinations on the shore of Lake Coeur-d'Alene heavy attack by Cryptorhynchus, with very little Agrilus work, was found; while in the large areas of willow near Athol, both insects were found. From these examinations it can be said that Agrilus sp. or its work was found in every dead or dying shoot examined in varying degrees of intensity, and in all cases it was sufficiently intense to kill that portion of the shoot in which the work was found. Cryptorhynchus, on the other hand, was not found in all of the shoots examined, but where found the work was sufficiently intense to kill that portion of the shoot.

All shoots examined may be classified into three groups as follows: (1) Those in which Agrilus had killed the entire shoot to the ground (Fig. 1, 2, 3); (2) those in which Agrilus had killed only a portion of the upper part of the shoot, of which the lower portion was yet green; and (3) those in which Agrilus was in the upper portion and

Cryptorhynchus in the lower portion (Fig. 4, 5). In this latter group there was often some overlapping of the two insects (Fig. 6). Of all the shoots examined 430 were tallied according to the above classification. These results are shown in table 1.

Table I  
Classification of Willow Shoots According  
to Attacking Insects

	:Complete shoot: :killed by :Agrilus	:Top of shoot killed: :by Agrilus. Base : :green	: Agrilus and : weevil together
Number	161	127	122
Percent	42.2	29.5	28.3

These data are certainly decided in their indication that Agrilus apparently kills the top of the shoot and may during one or more seasons of repeated attacks kill the entire shoot. In other cases, the green base left by Agrilus is attacked by the weevil.

At Rippling Waters the weevil work was much heavier, and very little Agrilus work could be found. In this area, however, willows are quite scarce and only a few were examined. A scale was found in great abundance in this area, as shown in Fig. 7, and was believed to have killed some of the shoots.

A few general observations were made which should be included here. In a few instances it was noted that both the weevil and Buprestid

had successfully attacked the native alder. In other cases, large brown spots shown in Fig. 8, believed to be the oviposition scars of a larger Buprestid or Cerambycid, were found on willow. In conclusion, it is believed that this injury to willow constitutes no serious menace from a protection standpoint. Willow in the areas examined is merely a temporary type which will be replaced by more desirable trees. During this temporary phase, although a high percentage of the willow shoots are killed by insects, there is a very vigorous sprouting from the base of each dead shoot, and it is believed that no soil cover will be lost as a result of this infestation.

Respectfully submitted,

W. D. Bedard  
Assistant Entomologist





Fig. 1- Oviposition of Agrilus sp.  
showing a large willow shoot attacked  
by this insect alone.  
(All photos by H. J. Rust)



Fig. 2- Primary attack of Agrilus sp.  
showing larval mines.



Fig. 3- Emergence holes of  
*Agrilus* sp.





Fig. 4- Work of Cryoterhynchus  
lapathi in base of willow.



Fig. 5- Bark removed to show  
work of Cryptorhynchus lanathi.



Fig. 6- Combined attack by weevil  
and Duprestid.



Fig. 7- Scale on willow.

Lepidosaphes ulmi Linn.



Fig. 8- Large brown spots believed to be oviposition of larger Buprestid or Cerambycid.